

REMARKS

Claims 1 - 5, 11, 18, 20, 23 - 25, 31, and 47 - 59 are pending. Claims 1 - 3, 18, 20, 23 - 24, 47, 52, and 53 have been amended. Claims 57 - 59 have been added. Claims 6 - 10, 12 - 17, 19, 21, 22, 26 - 30, and 32 - 46 have been cancelled. No new matter has been introduced. Reexamination and reconsideration of this application are respectfully requested.

The Examiner rejected claims 1 - 20, 37 - 41, and 47 - 51 under 35 U.S.C. § 102(e) as being clearly anticipated by U.S. Patent No. 6,590,560 to MacDonald et al. ("the MacDonald reference"). The Examiner rejected claims 21 - 36, 42 - 46, and 52 - 56 under 35 U.S.C. § 103(a) as being unpatentable over the MacDonald reference in view of U.S. Patent No. 6,504,423 to Riggio et al. ("the Riggio reference"). These rejections are respectfully traversed in so far as they are applicable to presently pending claims.

Independent claim 1, as amended, recites:

A power converter, comprising:

an input voltage system to receive an AC input voltage and to output a switched voltage;

a transformer, coupled to said input voltage system, to receive the switched voltage and to output an intermediate voltage, said transformer having a primary winding and a secondary winding; and

a boost circuit, coupled to the transformer, to receive the intermediate voltage and output a transformed voltage,

wherein said secondary winding of said transformer is configured as a boost inductor in the boost circuit.

The MacDonald reference does not disclose, teach, or suggest the power converter of claim 1, as amended. The Examiner states that the MacDonald reference discloses a plurality of input voltages, a transformer, a buck regulator, cables and connectors, a voltage comparison circuit (voltage programming circuit), a current

comparison circuit (current programming circuit), where the feedback is used to control the switch and provide a driving signal. (*Office Action, page 2*). Specifically, the MacDonald reference discloses a AC-to-DC power converter. The AC-to-DC power converter receives an AC input at an input terminal 12 and utilizes a full-wave bridge rectifier and a filter capacitor to create a DC voltage from which the switcher operates. An inductor L1 offers additional EMI filtering of the AC signal after the AC input signal has been rectified. A main controller is configured as a pulse width modulator with totem pole driver transistors coupled thereto. The power converter has a main power switch which drives the main transformer. The transformer, Schottky diode D11, filter capacitors C24 and C25 combine to provide the DC output voltage at a node N1. (*MacDonald, col. 4, lines 40 - 56*). A filter circuit allows for additional filtering of the DC output voltage derived at node N1. The filter circuit includes an inductor L3, capacitor C26, and a transformer NF1. The filter circuit produces a filtered DC output voltage at output node N2 having less than 100 mv peak-to-peak noise and ripple. (*MacDonald, col. 4, lines 57 - 62*).

This is not the same as a power converter including an input voltage system, a transformer including a primary winding and a secondary winding, and a boost circuit, **wherein said secondary winding of said transformer is configured as a boost inductor in the boost circuit.** First, the MacDonald reference does not disclose a boost inductor on the secondary side of its transformer. Instead, the MacDonald reference discloses a Schottky diode, a pair of capacitors to rectify the output of the transformer, and in addition a filtering circuit to filter the DC output. Further, there is no disclosure that the secondary winding of the MacDonald transformer **is utilized as a**

boost inductor in the boost circuit. The MacDonald reference does not separately identify the secondary winding of transformer T1 nor does it disclose that the secondary winding is utilized in any other circuit, much less as a boost inductor. (*MacDonald, col. 4, lines 40 - 62*). Accordingly, claim 1, as amended, distinguishes over the MacDonald reference.

Independent claim 47, as amended, recites limitations similar to claim 1, as amended. Accordingly, applicant respectfully submits that independent claim 47 distinguishes over the MacDonald reference for reasons similar to those discussed above in regard to claim 1, as amended.

Claims 2 - 16, 18, 20, and 48 - 51 depend, indirectly or directly, on claims 1 and 47, both as amended. Accordingly, applicant respectfully submits that dependent claims 2 - 16, 18, 20, and 48 - 51 distinguish over the MacDonald reference for reasons similar to those discussed above in regard to independent claim 1, as amended.

Independent claim 57 distinguishes over the MacDonald reference. Claim 57 recites:

A power converter capable of receiving an AC input voltage and a DC input voltage, comprising:

a transformer, said transformer coupled to a switching circuit which is utilized when the power converter receives the AC input voltage and said transformer including a primary winding and a secondary winding;

a boost circuit, coupled to the transformer, to receive the DC input voltage from a DC input source, **to utilize the secondary winding of the transformer as a boost inductor**, and to output a transformed voltage, wherein

the transformed voltage has a higher magnitude than the DC input voltage.

The MacDonald reference does not disclose, teach, or suggest the power converter of claim 57. The MacDonald reference discloses a DC-to-DC converter configured utilizing boost technology and also using the same kind of controller utilized

in the AC-to-DC converter. A transistor Q8 acts as the main power switch and diode D6 as the main rectifier. An inductor L2 is adapted to function as the boost inductor. Diodes D11 or D8 are utilized to filter the DC output from the boost inductor which is present at Node N1. (*MacDonald, col. 5, lines 33 - 43; Figs. 2B and 2C*). A feedback circuit includes a photocoupler circuit which is coupled to the DC-to-DC converter via photocoupler PH3. This input is input into the controller to regulate the filtered output at node N2. (*MacDonald, col. 5, lines 9 - 15*).

In contrast to the power converter claimed in claim 57, the MacDonald reference discloses a boost circuit including an inductor L2 that is separate and distinct from the windings of the MacDonald reference transformer D1. In other words, the MacDonald converter does not disclose a power converter capable of receiving an AC input voltage and a DC input voltage including a transformer and a boost circuit, the boost circuit being coupled to the transformer and utilizing **the secondary winding of the transformer as a boost inductor**, because the MacDonald reference has a separate boost inductor and transformer windings. Accordingly, applicant respectfully submits that claim 57 distinguishes over the MacDonald reference.

Independent claim 59 recites limitations similar to those of independent claim 57. Accordingly, applicant respectfully submits that claim 59 distinguishes over the MacDonald reference for reasons similar to those discussed above in regard to independent claim 57.

Independent claim 58 distinguishes over the cited references. Independent claim 58 recites:

A power converter capable of receiving an AC input voltage and a DC input voltage, comprising:

a first capacitor, coupled to the DC input voltage, which is charged to the DC input voltage;

a transformer, coupled to a primary switching circuit and utilized if an AC input voltage is supplied, said transformer having a primary winding and a secondary winding where the secondary winding includes a center tap to separate the secondary winding into a first autowinding and a second autowinding and **the DC input voltage is coupled to the center tap of the transformer; and**

a control circuit coupled to switching devices, the switching devices coupled to the secondary winding, where the control circuit and the switching devices control the first autowinding and the second autowinding to charge a second capacitor to a DC voltage, wherein the DC input voltage and the DC voltage are added together to create a transformed voltage at a first node.

The MacDonald reference does not disclose, teach, or suggest the power converter of claim 58. The Examiner states that the MacDonald reference does not disclose that a DC input is supplied to the center tap of a transformer. (*Office Action*, page 3). The applicant agrees with the Examiner and respectfully submits that claim 58 distinguishes over the MacDonald reference for at least the reasons that the MacDonald reference does not disclose application of a DC input voltage to a center tap of a transformer.

The Riggio reference does not make up for the deficiencies of the MacDonald reference. The Examiner states that the Riggio reference discloses the supplying of a DC input voltage to a center tap of a transformer to provide galvanic isolation and minimal voltage overshoot in the secondary which minimizes filtering requirements. (*Office Action*, page 3). In making this statement, the Examiner does not specifically point to any column or figure of the Riggio reference. Assuming, *arguendo*, that the Riggio reference discloses all that the Examiner states that it does, the Riggio reference does not disclose a power converter including a first capacitor, a transformer, and a **control circuit coupled to switching devices, the switching devices coupled to the**

secondary winding, where the control circuit and the switching devices control the first autowinding and the second autowinding to charge a second capacitor to a DC voltage, wherein the DC input voltage and the DC voltage are added together to create a transformed voltage at a first node.

There is no disclosure in the Riggio reference that the DC input voltage is also coupled to a first capacitor and **that a control circuit and switching devices control the autowindings of the transformer to charge a second capacitor to a DC voltage and that this DC voltage is added to the DC input voltage across the first capacitor**, as recited in claim 58. Accordingly, applicant respectfully submits that claim 58 distinguishes over the Riggio reference, alone or in combination with the MacDonald reference.

Independent claim 52, as amended, recites limitations similar to those recited in claim 58. Accordingly, applicant respectfully submits that independent claim 52 distinguishes over the MacDonald and the Riggio references, alone or in combination, for similar reasons to those discussed above in regard to independent claim 58.

Claims 23 - 36 and 53 - 56 depend, indirectly or directly, on independent claims 58 and 52, respectively. Accordingly, applicant respectfully submits that claims 23 - 36 and 53 - 56 distinguish over the MacDonald and the Riggio references, alone or in combination, for the same reasons as discussed above in regard to independent claim 58.

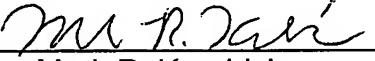
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Applicant believes that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call either of the undersigned attorneys at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

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